

Notice of Allowability

Application No.

10/713,254

Examiner

Sin J. Lee

Applicant(s)

PARK ET AL.

Art Unit

1752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 6-22-05.
2. ☒ The allowed claim(s) is/are 1-11.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

REASONS FOR ALLOWANCE

1. The following is an examiner's statement of reasons for allowance: In view of applicants' detailed explanation on the differences between fullerenes (as taught by Aoki'026) and presently claimed carbon nanotubes, previous 103(a) rejection on claims 1-9 and 11 over Aoki'026 in view of Anazawa et al'219 is hereby withdrawn. In view of applicants' explanation, it is the Examiner's position that one of ordinary skill in the art would not have been motivated to replace Aoki's fullerene in his photosensitive material with carbon nanotubes based upon the mere statement of Anazawa'219, which states that carbon nanotubes is made up of carbon atoms only in the same manner as the fullerene.

Mau et al (US 6,811,957 B1) teaches a process for making a patterned layer of aligned carbon nanotubes on a substrate, which comprises the steps of (i) applying a photoresist layer to a substrate, (ii) masking a region of the photoresist layer, (iii) subjecting the unmasked portion to electromagnetic radiation to transform the unmasked portion while leaving the masked portion untransformed, the transformed portion exhibiting solubility characteristics different to the untransformed portion, (iv) developing the photoresist layer by contacting with a solvent to dissolve one of the transformed and untransformed portions of the photoresist, leaving the other portion attached to the substrate, and (v) synthesizing (depositing) a layer of aligned carbon nanotubes on regions of the substrate to which the remaining photoresist portion is not attached to provide a patterned layer of aligned carbon nanotubes on the substrate.

Therefore, even though Mau's resulting product is a patterned layer of carbon

nanotubes on a substrate, his method of forming such product is clearly different from that of present invention: In the present invention, the carbon nanotubes is first surface-modified with double bond-containing functional groups, and then a coating film formed from the surface-modified carbon nanotubes is imagewise exposed to induce photopolymerization of the carbon nanotubes in the exposed areas of the coating film. The unexposed areas of the coating film are then removed to obtain a negative pattern of the carbon nanotubes.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

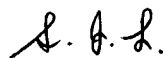
2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sin J. Lee whose telephone number is 571-272-1333. The examiner can normally be reached on Monday-Friday from 9:00 am EST to 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly, can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

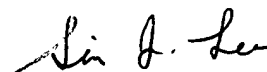
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



S. Lee
September 5, 2005



SIN LEE
PRIMARY EXAMINER